

Musculoskeletal Dysfunctions in Patients With Chronic Pelvic Pain: A Preliminary Descriptive Survey

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ABSTRACT

Objective: The purpose of this study was to determine the prevalence of musculoskeletal dysfunctions based on a standardized clinical examination of patients with chronic pelvic pain (CPP) who were referred to a specialized tertiary care center for laparoscopic examination. In addition, we stratified levels of self-reported pelvic pain, self-rated health, education, and work status based on musculoskeletal dysfunction status.

Methods: This study used a cross-sectional design to determine the prevalence of musculoskeletal dysfunctions in women with CPP who were referred to a tertiary care center specializing in care of women with CPP. The women completed a questionnaire and underwent a blinded systematic objective clinical examination of the musculoskeletal system by a doctor of chiropractic who then categorized the patients as having or not having musculoskeletal dysfunction.

Results: Ninety-four patients returned the questionnaire, completed the clinical examination, and fulfilled the inclusion criteria. More than half of the referred patients with CPP (48 out of 94) had musculoskeletal dysfunctions in the lumbar/pelvic region. No statistically significant differences were found between the groups with respect to self-rated health, education, work status, and pain level. Pain location was significantly different after Bonferroni correction in 1 out of the 36 aspects.

Conclusions: In this sample of CPP patients, 51% were categorized as having a musculoskeletal dysfunction. Overall, CPP patients were similar with respect to certain characteristics, such as age, body mass index, and pain level, regardless of their classification; however, patients with musculoskeletal dysfunction tended to report more pain in the front and back of the lower limbs. (*J Manipulative Physiol Ther* 2016;xx:1-7)

Key Indexing Terms: *Pelvic Pain; Musculoskeletal Pain; Musculoskeletal Diseases*

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INTRODUCTION

Chronic pelvic pain (CPP) is a nonspecific disorder characterized by episodic or constant pain in the pelvic region of more than 6 months' duration.^{1,2} In the general population, CPP affects 25% of fertile women³ and 10% to 16% of men.⁴

Approximately 39% of women report often or sometimes experiencing pelvic pain; 15% to 20% of these women have experienced pelvic pain for more than 1 year, and the cause is unknown in 61%.² A range of physical causes may be responsible for CPP, including pregnancy⁵ and gastrointestinal, urinary, gynecologic, neurologic, and musculoskeletal conditions. In addition, interactions between the individual and her social and physical environments bring even more complexity to the condition.⁶ Still, there are no effective treatments for women with CPP, which is responsible for heavy costs in the health care system—exceeding 12 billion dollars in the United States annually as a result of sickness benefit and early retirement.⁷

The role of the musculoskeletal system in relation to CPP is poorly understood, and to enhance knowledge in

this field of science, it has been proposed that a survey of the incidence of these abnormalities be performed.⁸ *Musculoskeletal dysfunction* has been defined as impaired or altered function of skeletal, arthrodial, and myofascial structures, resulting from either trauma or abnormal posture.⁹ Commonly used synonyms include, for example, *aberrant motion*, *biomechanical dysfunction*, *dysfunctional joint*, and *subluxation*. In the related literature, *musculoskeletal dysfunction* is used when a given examination maneuver elicits pain, compensatory response to pain, or muscle weakness.^{8,10-12} Pain arising from musculoskeletal dysfunction can be very similar to gynecologic pain.^{8,13,14}

Baker stated that “musculoskeletal dysfunctions often contribute to the signs and symptoms of chronic pelvic pain and in many cases may be the primary cause.”¹⁵ The use of manual treatment, such as manipulation, is hypothesized to treat or reduce musculoskeletal dysfunctions and pain in patients with CPP.^{13,15-18} One rationale for this treatment is that musculoskeletal dysfunctions affect the autonomic nerves supplying the pelvic viscera and thereby blood flow^{16,18}; another is that referred pain from musculoskeletal dysfunctions in the muscles, hips, pelvis, or lumbar spine joints may be responsible for the symptoms associated with CPP.^{13,17} Vertebral segmental or sacroiliac joint hypomobility or dysfunctions have been identified clinically, and low back pain or pelvic pain may respond favorably to manual treatment directed toward these dysfunctions.^{19,20}

The purpose of this study was to determine the prevalence of musculoskeletal dysfunctions based on a standardized clinical examination of patients with CPP who were referred to a specialized tertiary care center for laparoscopic examination. In addition, we stratified levels of self-reported pelvic pain, self-rated health, education, and work status based on musculoskeletal dysfunction status.

METHODS

Participants were recruited from January 2, 2007, to January 5, 2010, at an endometriosis referral center at the Department of Gynecology at the Aarhus University Hospital, Skejby, Denmark. Participants received information about the study and a questionnaire by mail before the clinical appointment. Sample size was not determined in advance but was instead a reflection of those patients who were willing to participate in the study during the recruitment period. Because the examiner was employed at the hospital and the present study did not in any way affect the patients' treatment, under Danish law, this study was exempted from ethical approval (Act on Research Ethics Review of Health Research Projects, October 2013, Section 14).²¹

Inclusion criteria were as follows: women aged 18 to 50 years who were referred to the Aarhus University Hospital

for laparoscopic investigation on suspicion of endometriosis and able to speak, read, and understand Danish.

Exclusion criteria were known diagnosis of endometriosis, cancer, diabetes, cardiovascular disease, inflammatory joint diseases, obvious joint abnormalities, or other spine or musculoskeletal system disorders.

Participants completed the questionnaire before the clinical examination and were blinded to the health care personnel; conversation during the examination was kept to a minimum and included only simple instructions or questions that were part of the protocol. The questionnaire was designed to collect information about age, height, and weight; education (not educated; student; skilled worker; apprentice; technical assistant; duration of education [<3 years; 3-4 years; >4 years]; other education; not known); work (full time; part time; not working); self-reported health (excellent; very good; good; fair; poor); self-reported pain, including pain drawings and pain intensity during menstruation, from menstruation to ovulation, and during ovulation, using an 11-box numeric rating scale. Pain intensity was assessed by using the visual analog scale and pain pattern based on pain drawings.

Clinical examinations were scheduled to take 30 minutes and were performed by a doctor of chiropractic with 4 years of experience and a special interest in pelvic pain. The clinical examination included the following:

- *Active range of motion:* This examination was performed with the patient standing and the examiner looking for differences in and the patient's willingness to do lumbar movements, including flexion, extension, lateral bending, and rotation to left and right. Painful movement in at least one direction was considered a positive finding that indicated a mechanical musculoskeletal dysfunction. Reduced movement and presence of pain during range of motion were noticed.
- *Identification of myofascial trigger points in the quadratus lumborum, gluteus medius, gluteus maximus, piriformis, and psoas muscles using digital palpation:* If pain was reproduced during palpation, it was considered a positive finding that indicated a mechanical musculoskeletal dysfunction.
- *Springing test and segmental palpation from T9 to L5 and the sacroiliac joints (SIJ):* With patient lying prone, posterior to anterior pressure was applied; if pain was reproduced, this was considered a positive finding that indicated mechanical musculoskeletal dysfunction.
- *Pelvic girdle pain tests including the posterior pelvic pain provocation test; flexion, abduction, external rotation, and extension test; and Gaenslen test²²:* The posterior pelvic pain provocation test is a pain provocation test that is used to determine the presence of SIJ dysfunction. The test was considered positive for SIJ dysfunction if axial pressure reproduced pain.

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